

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Virginia Electric and Power Company
Dominion Generation – Yorktown Power Station
1600 Waterview Road, Yorktown, Virginia
Permit No. TRO-60137

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. Title IV required that affected sources (subject to acid rain regulations) receive a Title IV permit. As required by 40 CFR Part 70 and 72, and 9 VAC 5 Chapter 80, Virginia Electric and Power Company has applied for a federal Acid Rain Operating Permit for its Dominion Generation – Yorktown Power Station facility. The Department has reviewed the applications for Title IV and Title V permits and has prepared a draft Acid Rain Operating Permit.

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FACILITY INFORMATION

Permittee

Virginia Electric and Power Company
5000 Dominion Boulevard
Glen Allen, VA 23060

Facility

Dominion Generation – Yorktown Power Station
1600 Waterview Road
Yorktown, VA

County-Plant Identification Number: 51- 199-00001

SOURCE DESCRIPTION

NAICS Code: 221112 – Fossil Fuel Electric Power Generation

Dominion Generation-Yorktown Power Station is a power generating facility located by the York River in York County. The station has three large utility boilers, and several smaller emissions units. As a “major stationary source” for NO_x, SO₂, and particulate matter, any major modification would be subject to federal Prevention of Significant Deterioration (PSD) major new source review (NSR) regulations under Title I of the Federal Clean Air Act Amendments (CAAA) of 1990. A 100-ton major source threshold for each criteria pollutant applies to this source for NSR because it is considered a “large utility”, one of 28 named stationary source types defined in federal NSR regulations implementing Title I of the CAAA. It is also subject to Titles IV and V of the CAAA as a major acid rain source. The facility is major under Title V for criteria pollutants nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter less than 10 microns diameter (PM₁₀), and sulfur dioxide (SO₂) because actual emissions for each exceeds 100 tons per year. It is a major source of hazardous air pollutants (HAPs) hydrogen chloride and hydrogen fluoride (each exceeding 10 tons per year), and total facility HAPs (which exceed 25 tons per year). Yorktown Power Station is designated an “acid rain facility” subject to the Code of Federal Regulations (40 CFR, Part 72), which implements Title IV and Title V requirements of the 1990 CAAA for acid rain sources. Three Combustion Engineering tangential-fired electric generating units (ES-1, ES-2, and ES-3) combust fossil fuels for the generation of electrical power, including two coal-fired steam generators, and a No. 6 residual fuel oil-fired steam generator.

Existing source rules in Chapter 40 of the Virginia air regulations apply for PM, SO₂, and opacity, when combusting coal, petroleum coke, distillate oil, natural gas, and refinery gas in boiler ES-1; coal, petroleum coke, and distillate oil in boiler ES-2; and residual oil, on-specification used oil, natural gas, and distillate fuel oil in boiler ES-3, because no modifications to the emissions units have been reported since they were constructed that were determined to be subject to preconstruction new source review permitting requirements of Chapter 50 of the regulations. For the combustion of those fuels, therefore, no NSR fuel use limits, or best available control technology (BACT) requirements, apply.

The facility is a Title V major source of NO_x, SO₂ and PM. This source is located in an attainment area for all pollutants. The facility is currently permitted under Minor NSR Permits dated 01/13/94 and 08/23/99 and a State Operating Permit dated 09/03/96.

The facility is also operating under a consent decree from EPA. Specific conditions from the decree associated with this facility have been added to the permit.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

The revised application submitted by the facility on October 26, 2007, states that the facility will be complying with applicable requirements that are not SIP approved. It also states that in certain circumstances the EPA Consent Decree compliance provisions may vary with SIP provisions. When a conflict exists, the facility will be in compliance with the EPA Consent Decree.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following :

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
ES-1A ES-1B ES-1C ES-1D ES-1E	EP-0	ES-1 – Combustion Engineering tangential-fired boiler (1957). Fires coal (primary), petroleum coke, distillate oil, natural gas and refinery gas. May consume solvent solution or use borate injection, such as GAM-60 to coat furnace walls.	1697 mmBtu/hr (nominal)	Western Precipitator 9VG12 cold-side ESP and Koppers-Custom Design Multicyclone. Equipped with low- NO _x burners, modified overfire air and ammonia or urea injection system for voluntary NO _x control.	CD-1A CD-1B CD-1C	PM NO _x	01/13/94 NSR; 09/03/96 SOP; 05/02/03 Title IV Phase II Acid Rain Permit.
ES-2A ES-2B ES-2C	EP-0	Unit ES-2 – Combustion Engineering tangential-fired boiler (1959). Fires coal (primary), petroleum coke and distillate oil. May consume solvent solution, cofire pond bottoms or use borate injection, such as GAM-60 to coat furnace walls.	1745 mmBtu/hr (nominal)	Environmental Elements – Custom Design cold-side ESP. Equipped with low- NO _x burners, modified overfire air and ammonia or urea injection system for voluntary NO _x control.	CD-2 CD-2B	PM PM-10 NO _x Arsenic Beryllium Cadmium Chromium Manganese Nickel	01/13/94 NSR; 09/03/96 SOP; 08/23/99 NSR; 05/02/03 Title IV Phase II Acid Rain Permit.
ES-3A ES-3B ES-3C ES-3D	EP-3	Unit ES-3 – Combustion Engineering tangential-fired boiler (1974). Fires residual oil (primary), on-specification used oil, natural gas and distillate fuel oil. Fuel oils may contain additives, added either on-site or off-site.	8061 mmBtu/hr (nominal)	Universal Oil Products – Custom Design Multicyclone	CD-3	PM	09/03/96 SOP; 05/02/03 Title IV Phase II Acid Rain Permit.
ES-4	EP-4	Struthers distillate oil-fired fluid heater (1972).	20.5 mmBtu/hr (nominal)	N/A	N/A	N/A	N/A

ES-5	EP-5	Radco distillate oil-fired fluid heater (1975).	40.0 mmBtu/hr (nominal)	N/A	N/A	N/A	N/A
Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Coal Handling							
ES-6a	EP-6	Coal receiving from coal car unloading	600 tons coal/hr (nominal)	Enclosures	N/A	PM PM-10	N/A
ES-6b	EP-6	Coal conveying system (Drop points DP-1 to DP-9)	600 tons coal/hr (nominal)	Enclosures and fabric filter	N/A	PM PM-10	N/A
ES-6c	EP-6	Coal crusher (Drop point DP-3)	600 tons coal/hr (nominal)	Enclosures	N/A	PM PM-10	N/A
ES-6d	EP-6	Coal pile storage and handling (bulldozer and wind erosion)	600 tons coal/hr (nominal)	N/A	N/A	PM PM-10	N/A

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2006 CEDS Pollutant Emissions Report is attached. Emissions are summarized in the following table.

2006 Criteria Pollutant Emission in Tons/Year

Pollutant	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	PM	NO _x
Total	30.2	239.9	21,700.4	122.5	84.8	805.0	4,066.6

EMISSION UNIT APPLICABLE REQUIREMENTS – FUEL BURNING EQUIPMENT
(Units ES-1 to ES-5)

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-40-900	Rule 4-8: Standard for particulate matter
9 VAC 5-40-910	Rule 4-8: Emission allocation system
9 VAC 5-40-930	Rule 4-8: Standard for sulfur dioxide
9 VAC 5-40-940	Rule 4-8: Standard for visible emissions

See also: NSR permit issued 1/13/94
NSR permit issued 8/23/99
SOP permit issued 9/03/96
EPA Consent Decree (Appendix B)

Monitoring

The following Virginia Administrative Codes that have specific monitoring requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-40-100	Rule 4-1: Monitoring
9 VAC 5-40-940	Rule 4-8: Standard for visible emissions

See also: NSR permit issued 1/13/94
EPA Consent Decree (Appendix B)

Recordkeeping, Testing & Reporting

The following Virginia Administrative Codes that have specific recordkeeping, testing or reporting requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-50-50	Notification, records and reporting
9 VAC 5-80-1210	Article 6: Permit invalidation, suspension, revocation and enforcement

See also: NSR permit issued 1/13/94
NSR permit issued 8/23/99
SOP permit issued 9/03/96
EPA Consent Decree (Appendix B)

EMISSION UNIT APPLICABLE REQUIREMENTS – PROCESS EQUIPMENT (Coal Pile Grading and Maintenance and Coal Crushing and Handling)

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-20	Existing Stationary Sources: Compliance
9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-40-260	Rule 4-4: Standard for particulate matter (AQCR 1-6)
9 VAC 5-40-80	Rule 4-1: Standard for visible emissions

Monitoring, Recordkeeping & Testing

The following Virginia Administrative Codes that have specific monitoring, recordkeeping, or testing requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-50-50	Notification, records and reporting

FACILITY-WIDE CONDITIONS

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
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Monitoring & Recordkeeping

The following Virginia Administrative Codes that have specific monitoring or recordkeeping requirements have been determined to be applicable:

9 VAC 5-80-490	Article 3: Permit Content
9 VAC 5-20-180	Air Quality Programs: Facility and control equipment maintenance or malfunction

See also: NSR permit issued 1/13/94
NSR permit issued 8/23/99

Testing

The following Virginia Administrative Codes that have specific testing requirements have been determined to be applicable:

9 VAC 5-40-30	Existing Stationary Sources: Emission Testing
9 VAC 5-80-490	Article 3: Permit Content

See also: NSR permit issued 1/13/94
NSR permit issued 8/23/99

Additional Applicable Requirements

The following federal regulations have been determined to be applicable:

Acid Rain -

9 VAC 5 Chapter 80 - Article 3 - Acid Rain the following condition is included in the permit:

In accordance with the Air Pollution Control Law of Virginia §10.1-1308 and §10.1-1322, the Environmental Protection Agency (EPA) Final Full Approval of the Operating Permits Program (Titles IV and V) published in the Federal Register December 4, 2001, Volume 66, Number 233, Rules and Regulations, Pages 62961-62967 and effective November 30, 2001, and Title 40, the Code of Federal Regulations §§72.1 through 76.16, the Commonwealth of Virginia Department of Environmental Quality issues this permit pursuant to 9 VAC 5 Chapter 80, Article 3 of the Virginia Regulations for the Control and Abatement of Air Pollution (Federal Operating Permit Article 3). (9 VAC 5-80-490 B.2)

CAIR -

9 VAC 5 Chapter 140 - Parts 2-4: From EPA's Question and Answer memo:

Question 1. - The CAIR regulations refer to the CAIR permit as a "complete and separable portion of the Title V operating permit." What does this mean?

It means that the CAIR portion of the Title V permit must be a discrete "chapter" in the overall Title V permit See 40 CFR 96.120(b), 97.120(b), 96.220(b), 97.220(b), 96.320(b), and 97.320(b). To facilitate this requirement, EPA recommends that the permitting authority simply append the CAIR permit application (which references the CAIR standard requirements) to the Title V permit and include language stating that the provisions contained in the CAIR permit application are applicable requirements that are a binding and enforceable portion of the title V permit.

As with permitting under the Acid Rain and NO_x Budget Trading Programs, the CAIR permit is a portion of the Title V permit. As a consequence, the incorporation of CAIR requirements into the Title V permit should not modify any non-CAIR requirements already contained in the Title V permit.

Based on the above information, the CAIR application has been made an Appendix to the Title V permit.

Streamlined Requirements

Conditions III A.1., 2., and 3 the reference to ASTM D396-78 has been changed to remove the "78". The reference now reads "ASTM D396".

Condition 15 regarding ozone season NO_x emissions through 2007 has been removed as this permit will be issued and effective beginning in 2008.

Section V – Process Equipment Requirements (Asbestos removal) has been removed as it is covered in the General Section of the new boilerplate.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 3-2006".

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:

9 VAC 5-40-50.	Notification, Records and Reporting
9 VAC 5-50-50.	Notification, Records and Reporting

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-550.	Changes to Permits.
9 VAC 5-80-660.	Enforcement.

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-80-650	Malfunction
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Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

9 VAC 5-60-70	Designated Emissions Standards
9 VAC 5-80-490	Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

9 VAC 5-50-310, Odorous Emissions
9 VAC 5-50-320, Toxic Pollutants

INAPPLICABLE REQUIREMENTS

Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
40 CFR Part 60, Subpart Ka	Performance Standards for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978 and Prior to July 23, 1984	This requirement does not apply to any of the tanks listed as insignificant. The tanks are either smaller in size than 400,000 gallons or were installed prior to, and not modified after, the applicability date of May 18, 1978.
40 CFR Part 60, Subpart Kb	Performance Standards for VOL Storage Vessels (including petroleum liquid storage vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984	This requirement does not apply to any of the Volatile Organic Liquid (VOL) storage tanks listed as insignificant. The tanks are either smaller in size than 20,000 gallons, or were installed prior to, and not modified after, the applicability date of July 23, 1984 (68FR59328, et seq., of 10/15/03)
40 CFR Part 60, Subpart Y (60.250-60.254)	Standards of Performance for New or Modified Coal Preparation Plants	Any coal preparation facility processing more than 200 tons coal per day that constructs or modifies after October 24, 1974. This facility existed before that date, and exceeds the process rate, but has not reported modifications to coal preparation processes.
40 CFR Part 60, Subparts D, Da, Db, Dc (60.40-60.48c)	Boiler NSPS Subparts	All boilers at this facility were constructed prior to, and not modified after, the applicability date for each NSPS.
40 CFR Part 63	All Subparts	No current MACT affected sources at this facility.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
IS-1	No. 2 fuel oil storage tank	9 VAC 5-80-720 B	VOC	15,229 gallons
IS-2	No. 2 fuel oil storage tank	9 VAC 5-80-720 B	VOC	466,379 gallons
IS-3	Kerosene dispensing station and tank	9 VAC 5-80-720 B	VOC	5,000 gallons
IS-4	Turbine lube oil systems	9 VAC 5-80-720 B	VOC	
IS-5	Induced draft fan lube oil system	9 VAC 5-80-720 B	VOC	
IS-6	Forced draft fan lube oil system	9 VAC 5-80-720 B	VOC	
IS-7	Boiler feed pump system	9 VAC 5-80-720 B	VOC	
IS-8	No. 6 fuel oil drain tanks	9 VAC 5-80-720 B	VOC	1,028 gallons & 1,028 gallons
IS-9	Station degreaser systems-SafetyKleen self-contained	9 VAC 5-80-720 B	VOC	
IS-10	No. 6 fuel oil storage tank	9 VAC 5-80-720 B	VOC	11,130,000 gallons
IS-11	No. 6 fuel oil storage tank (Yorktown Refinery)	9 VAC 5-80-720 B	VOC	21,217,216 gallons
IS-12	No. 6 fuel oil storage tank (Yorktown Refinery)	9 VAC 5-80-720 B	VOC	21,180,725 gallons
IS-13	No. 6 fuel oil storage tank (Yorktown Refinery)	9 VAC 5-80-720 B	VOC	21,227,055 gallons
IS-14	No. 6 fuel oil storage tank (Yorktown Refinery)	9 VAC 5-80-720 B	VOC	21,222,541 gallons
IS-15	No. 6 fuel oil storage tank (Yorktown Refinery)	9 VAC 5-80-720 B	VOC	21,224,611 gallons
IS-16	Gasoline dispensing station and tank	9 VAC 5-80-720 B	VOC	5,000 gallons
IS-17	Used oil separator tank	9 VAC 5-80-720 B	VOC	10,362 gallons
IS-18	Fly ash handling & truck loading (controlled by addition of water)	9 VAC 5-80-720 B	PM10	
IS-19	Unit 3 fuel oil additive storage tank	9 VAC 5-80-720 B	VOC	8,813 gallons
IS-20	Hydrogen oil seal tank system	9 VAC 5-80-720 B	VOC	
IS-21	No. 2 fuel oil-fired emergency generator	9 VAC 5-80-720 B	VOC, SO ₂ , NO _x , PM10, CO	
IS-22	Electro-hydraulic control system	9 VAC 5-80-720 B	VOC	
IS-23	Fire water diesel pump and tank	9 VAC 5-80-720 B	VOC, SO ₂ , NO _x , PM10, CO	575 gallon tank, 340 Hp engine
IS-24	Coal yard diesel fuel dispensing station and tank	9 VAC 5-80-720 B	VOC	5,000 gallons

IS-25	Warehouse diesel fuel dispensing station and tank	9 VAC 5-80-720 B	VOC	5,000 gallons
IS-26	Emergency diesel generator fuel tank	9 VAC 5-80-720 B	VOC	584 gallons
IS-27	No. 2/diesel fuel tank for oil heater (Tank 161), constructed 1972	9 VAC 5-80-720 B	VOC	15,571 gallons
IS-28	No. 2/diesel fuel tank for oil heater (Tank 161), constructed 1972	9 VAC 5-80-720 B	VOC	15,571 gallons
IS-29	No. 2/diesel fuel tank for oil heater (Tank 161), constructed 1974	9 VAC 5-80-720 B	VOC	70,438 gallons

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be place on public notice in Virginian Pilot from November 11, 2007 to December 11, 2007.